

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

CALLAWAY GOLF COMPANY,

Plaintiff,

v.

ACUSHNET COMPANY,

Defendant.

C.A. No. 06-91 (SLR)

**DECLARATION OF WILLIAM E. MORGAN**

I, William E. Morgan, hereby state as follows:

1. I am the Senior Vice President of Research & Development for Golf Balls at Acushnet Company ("Acushnet"). In that position, I am responsible for all golf ball R&D at Acushnet. With the exception of two years in golf club operations (1987-1988), I have worked in R&D at Acushnet since I joined the company in 1986. I have been directly responsible for Acushnet's golf ball product development since 1989.
2. I have 27 years of experience in the golf industry. Before joining Acushnet, I worked at the Ben Hogan Company from 1982 to 1986. At Hogan, I was a member of the golf ball R&D team working on both wound and two-piece solid golf balls.
3. I graduated from the University of Dallas in 1977 with a BS in Biochemistry.

- 2 -

4. I am an inventor on over 40 U.S. Patents, all related to golf ball technology. I am named as an inventor on over 20 additional U.S. Patent applications published and pending.
5. I have been an invited speaker at numerous venues related to golf, including: US PGA Show; US PGA Section Meetings; the Swedish PGA; UK customer seminars; the UK PGA Expo; Acushnet customer seminars; and the U.S. Patent and Trademark Office.
6. By virtue of my first hand experience in the industry, I am familiar with the history of golf ball development.
7. Through much of the 20<sup>th</sup> century golf was played at the highest level with wound-core balata-covered golf balls. The soft balata cover of these balls allowed a skilled golfer to impart a higher spin on the ball and more effectively shape their shots. For example, imparting a high spin on the ball on approach shots to the green allows a golfer to make the ball stop rolling on the green, resulting in shots which leave the ball closer to the hole.
8. Skilled golfers also valued balata balls for the “feel” provided by the soft balata covers. Difficult to quantify, yet frequently reported by players, a “soft feel” instills in golfers a sense of confidence. The soft cover of balata golf balls both increases spin and the shot-making confidence of better players.
9. Because of the benefits they provided to skilled golfers, balata balls were used almost exclusively by highly skilled golfers such as professionals, skilled amateurs, and those who sought to emulate them. Balls with soft covers, designed to appeal to these high

- 3 -

level golfers are often classified in the industry as “premium” or “high performance” golf balls. Acushnet’s Pro V1 and Pro V1x balls are examples of such premium balls that are sold today.

10. While balata balls dominated the premium segment of the golf ball market for many years, they had certain drawbacks. First, balata covered balls were expensive to manufacture. The material costs of the balata cover were high, and the manufacturing processes used to produce balata covers were labor intensive. Second, balata covers were relatively low in durability, and could be cut or scuffed when mishit.
11. Because it was well known that the feel and spin generated by balata balls was due in large part to their soft cover, golf ball designers knew that golf balls designed to appeal to the premium segment, including professional golfers and skilled amateurs, must have a cover hardness similar to that of balata. Through the 20<sup>th</sup> century and to this day, better golfers have preferred golf balls which provide both a soft feel and a softer cover to enable the confident execution of higher spin shots into the green. Thus, it was, and continues to be a goal of golf ball designers in making premium or high performance golf balls to have a soft cover layer, with a cover hardness similar to balata.
12. By 1995, it was well known by golf ball designers that balata had a plaque or “off the ball” Shore D hardness of around 40 Shore D. This is confirmed, for example, in a 1990 article in *Science and Golf* by R. J. Statz on pages 209 and 210.<sup>1</sup>

---

<sup>1</sup> "'Surlyn' Ionomers for Golf Ball Covers," R.J. Statz, published in Science and Golf: Proceedings of the World Scientific Congress of Golf, A.J. Cochran (1990). AC0131200-207.

- 4 -

13. It was similarly well known that because balata was a soft material "off the ball," it would also be a soft material when used as a golf ball cover and measured "on the ball." Balata-covered golf balls typically had an "on the ball" Shore D hardness in the upper 40s to mid 50s. The "on the ball" measurements were slightly higher because the cover thickness was always thinner than the plaques used when testing hardness "off the ball." Testing cover materials "on the ball" was most commonly done because it provided ball makers a more direct method of comparing different kinds of golf balls.

14. I have reviewed a 1995 article by Michael J. Sullivan<sup>2</sup> in which he cites the cover hardness of several kinds of commercially available golf balls. In Table 1, titled "Spin Rates and Cover Hardness of Popular Ball Types," he reports the cover hardness and spin of two balata covered balls from that time frame. The data he reports is summarized below<sup>3</sup>:

<b>Table 1. Spin Rates of Popular Balls</b>			
<b>Ball</b>	<b>Ball Type</b>	<b>Spin Rate (RPM)</b>	<b>Cover Hardness (Shore D)</b>
Maxfli HT 100	1.68", wound core, Syn. Balata Cover	9,805	53
Titleist Tour 100	1.68", wound core, Syn. Balata Cover	9,426	55

<sup>2</sup> "The Relationship Between Golf Ball Construction and Performance," M.J. Sullivan and T. Melvin, published in Golf the Scientific Way, A.J. Cochran (1995). CW0055453-456. The same article, with some minor differences, also appeared in 1994 as "The Relationship Between Golf Ball Construction and Performance," M.J. Sullivan and T. Melvin, published in Science and Golf II: Proceedings of the 1994 World Scientific Congress of Golf, A.J. Cochran and M.R. Farrally (1994). AC0100916-921.

<sup>3</sup> The article also identifies the Top-Flite Tour Z-Balata 100 as having a "2-pc Synthetic Balata Cover" and having a Shore D hardness of 53 and spin rate of 10,011 RPM. This ball actually had an ionomer blend cover, not a synthetic balata cover.

- 5 -

Because the “off the ball” hardness of balata was known to be approximately 40 Shore D, it is clear to me that these reported measurements were taken “on the ball.” This was explicitly confirmed by Mr. Sullivan in the 1994 version of the same article: “Shore hardness was measured in general accordance with ASTM Test D-2240, measured on the parting line of a fixtured, finished ball.” Science and Golf II, at 335.

15. I have also reviewed Acushnet’s Competitive Golf Ball Reports from the early 1990s, which also confirm the hardness of balata covered balls. For example, the 1990 Competitive Ball Report shows that balata balls had “on the ball” Shore D hardness values ranging from 47-54. The data is summarized below:

Ball	Cover Hardness (Shore D)
U.S. Balls	
Titleist Tour 100 <sup>4</sup>	54
Titleist 384 Tour 100 <sup>5</sup>	53
Titleist 384 LT 100 <sup>6</sup>	47
Dunlop Maxfli DDH Tour Ltd. <sup>7</sup>	50
Dunlop Maxfli DDH Tour Ltd. HT 100 <sup>8</sup>	50
Maxfli HT-100 <sup>9</sup>	50

---

<sup>4</sup> AC0049409

<sup>5</sup> AC0049412

<sup>6</sup> AC0049416

<sup>7</sup> AC0049426

<sup>8</sup> AC0049430

<sup>9</sup> AC0049431

- 6 -

Slazenger Balata 480 <sup>10</sup>	52
U.K. Balls (includes only balls not shown in U.S. Balls above)	
Maxfli Tour Ltd. HT <sup>11</sup>	55
Slazenger Interlock 480 <sup>12</sup>	50
Slazenger 480 <sup>13</sup>	50
Japan Balls (includes only balls not shown in U.S. or U.K. Balls above)	
Dunlop Royal Maxfli Balata <sup>14</sup>	49
Bridgestone Jumbo J's <sup>15</sup>	49

16. The 1991 Competitive Ball Report from Acushnet likewise shows the Shore D hardness values for balata balls measured that year. These balls had Shore D cover hardness values ranging from 48-54, as measured "on the ball."

Ball <sup>16</sup>	Cover Hardness (Shore D)
Titleist Tour 100	54
Titleist 384 LT	48
Maxfli 432 HT	50
Maxfli DDH Tour Ltd (360)	52

---

<sup>10</sup> AC0049440

<sup>11</sup> AC0049527

<sup>12</sup> AC0049530

<sup>13</sup> AC0049534

<sup>14</sup> AC0049582

<sup>15</sup> AC0049593

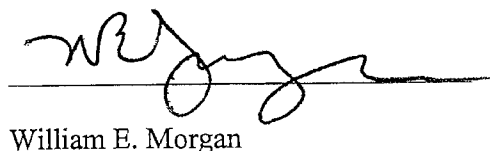
<sup>16</sup> All measurements in this table are taken from pages AC0049683-84 of the 1991 Competitive Ball Report.

- 7 -

Slazenger 480	48
---------------	----

17. Finally, the 1994 Competitive Ball Report Acushnet prepared shows that the balata balls available in that year had Shore D hardness values ranging from 50-52:

Ball <sup>17</sup>	Cover Hardness (Shore D)
Titleist Tour Balata	50
Titleist Pro Trajectory	51
Titleist Tour	51
Titleist 384 Tour	51
Maxfli Tour Ltd. HT	52
Royal Maxfli	52
Maxfli HT Tour	52
Maxfli Balata	50
Slazenger 420 Balata 100	52
Rextar Pro Model 100	50
Bullet USA Balata	51
Wilson Ultra Tour Balata	52

Dated: 11/30/2009


William E. Morgan

<sup>17</sup> Measurements taken from pages AC0072912, AC0072914, AC0072916, and AC0072945.

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

**CERTIFICATE OF SERVICE**

I, David E. Moore, hereby certify that on December 1, 2009, the attached document was electronically filed with the Clerk of the Court using CM/ECF which will send notification to the registered attorney(s) of record that the document has been filed and is available for viewing and downloading.

I further certify that on December 1, 2009, the attached document was Electronically Mailed to the following person(s):

Thomas L. Halkowski  
Fish & Richardson P.C.  
222 Delaware Avenue, 17<sup>th</sup> Floor  
P.O. Box 1114  
Wilmington, DE 19899-1114  
[halkowski@fr.com](mailto:halkowski@fr.com)

Frank E. Scherkenbach  
Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804  
[scherkenbach@fr.com](mailto:scherkenbach@fr.com)

Robert A. Denning  
David S. Shuman  
W. Chad Shear  
Fish & Richardson P.C.  
12290 El Camino Real  
San Diego, CA 92130  
[denning@fr.com](mailto:denning@fr.com)  
[shuman@fr.com](mailto:shuman@fr.com)  
[shear@fr.com](mailto:shear@fr.com)

Jonathan J. Lamberson  
Christina D. Jordan  
Craig R. Compton  
Fish & Richardson P.C.  
500 Arguello Street, Suite 500  
Redwood City, CA 94063  
[lamberson@fr.com](mailto:lamberson@fr.com)  
[cjordan@fr.com](mailto:cjordan@fr.com)  
[compton@fr.com](mailto:compton@fr.com)

/s/ David E. Moore  
Richard L. Horwitz  
David E. Moore  
Potter Anderson & Corroon LLP  
Hercules Plaza – Sixth Floor  
1313 North Market Street  
Wilmington, DE 19899-0951  
(302) 984-6000  
[rhorwitz@potteranderson.com](mailto:rhorwitz@potteranderson.com)  
[dmoore@potteranderson.com](mailto:dmoore@potteranderson.com)